



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

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VS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/148,749 09/04/98 SMITH

G PC-3201

EXAMINER

IM62/0426

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GRAY, T

ART UNIT

PAPER NUMBER

1742

DATE MAILED:

04/26/00

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/148,749

Applicant(s)

SMITH ET AL.

Examiner

Tamara N Gray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

## Attachment(s)

- 14) ☒ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 17) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other: \_\_\_\_\_.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sileo et al. Sileo et al teaches a nickel based superalloy that comprises by weight 5-26% Cr, 3-13.2% Al, 0.1-1.5% Hf, 0.001-0.8% Y, 0-5% Ti, 0-24% Co, 0-15% W, 0-4% Mo, 0-12% Ta, 0-0.2% Zr, 0-0.2% B, 0-0.25% C, 0-0.6% Si, 0-7% Re, 0-5% Cb, 0-0.2%, Fe, 0-0.1% Cu, 0-0.05% of each of P, S, Pb, Bi, and Mn, the balance essentially Ni. What Sileo et al does not teach the presence of Nitrogen in the range of 0-0.1 wt % nor does it teach the prime gamma phase or the double prime gamma phase in the specified ranges. 0-0.1 wt % Nitrogen would also include no nitrogen being present in the alloy. Also it is instantly disclosed in the description of the invention that the  $\gamma'$  phase is precipitated from aluminum in an amount ranging from 2-3.5 wt %. Even though Sileo et al does not mention the  $\gamma'$  phase, there is the presence of aluminum in the range of 3-13.2%, therefore the  $\gamma'$  phase would inherently present. An addition of 0.05-2 wt % titanium would act like an aluminum addition and contribute to the mechanical properties by also precipitating as a  $\gamma'$  phase. Maintaining niobium or columbium at less than 0.4% enhances the alloy's stability by limiting the amount of

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metastable  $\gamma''$  precipitated. Since Sileo et al also has niobium in the range of 0-5 % it will have a limited amount of the  $\gamma''$  phase.  $\gamma'$  consists of 8-20 wt % of the alloy, while  $\gamma''$  consists of less than 2 wt % of the alloy. Most of the elements in the alloy falls within the range of the prior art. However, in the cases where the claimed ranges "overlap or lie inside the ranges disclosed by the prior art", for example chromium, aluminum, hafnium, zirconium, silicon, iron and manganese, a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). Similarly, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one of ordinary skill in the art would have expected them to have the same properties, for example the molybdenum. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Therefore, the claimed subject matter would have been obvious to one of ordinary skill in the art at the time the invention was made. In the instant case, this rejection could be overcome through a showing in proper declaration form that the differences in the ranges would result in a change in the properties of the alloy.

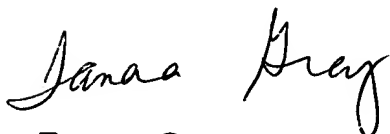
### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamara N Gray whose telephone number is 703 305-0387. The examiner can normally be reached on mon-fri 8am-4:30pm.

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The fax phone numbers for the organization where this application or proceeding is assigned are 703 308-4242 for regular communications and 703 305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.



Tamara Gray  
Patent Examiner  
April 24, 2000



SCOTT KASTLER  
PRIMARY EXAMINER  
~~GROUP 1300~~